

Category C—Low

Russian thistle (*Salsola tragus*)

Identification and Impacts



Photo credit: J.M. DiTomaso



Photo credit: NPS



Photo Credit: Bureau of Indian Affairs

Navajo Name

Chi'ildeeníni

Origin

Native to Eurasia

Description

Russian thistle is a bushy summer annual that grows 3 feet tall or more in a spherical shape. It has rigid, curved

branches that grow upward and are covered in stiff, prickly upper stem leaves. The plant can appear bluish green to yellow-green. Leaves and stems are succulent and become more rigid as they mature. Leaves are alternate and thread like, developing a sharp tip at the end. Flowers are small and grow at the leaf axils. They have showy sepals that can be white to pink and no petals.



Photo credit: E. Coombs

Biology

Russian thistle grows in disturbed sites, such as waste areas, roadsides, and some over used native plant communities. It grows best in loose sandy soils and can tolerate alkaline and arid conditions, where it can outcompete native plants during drought conditions. Plants usually flower in the summer and early fall. In the fall, plants senesce, turning gray or brown. At this stage, the shrub can break off at the root, forming a tumbleweed. As the tumbleweeds move, seeds are distributed. The plant skeletons can persist for more than a year, and can accumulate along fences and structures, increasing fire risks. Seeds can survive for up to 3 years and require little moisture to germinate.

Locations

Currently found throughout the Navajo Nation on rangelands and agricultural sites.

Ecological Threat and Management Concerns

Russian thistle invades arid lands and increases fire risk. The tumbleweeds can create fire hazards along structures and allow the plants to spread and establish at new sites. They are also high in oxalates, making them toxic to livestock. The stiff spines on the leaves can also cause injury. Russian thistle has also shown resistance to a number of herbicides.

Key ID Tips

- Succulent leaves with a sharp tip at the end.
- Small, solitary flowers at the leaf axils, with no petals and sepals that can be white to magenta.
- Stems are red

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Additional safety measures and limitations may apply for each method. Refer to the [Navajo Nation Integrated Weed Management Plan](#) for more information.

Mechanical/Manual Removal

Small infestations can be hand pulled or hoed before seed set. Mowing should be repeated to provide control and done before flowers mature. If done after seed set, it can disperse seeds and increase the population size. Tilling can control plants but should be repeated for at least two years to deplete the seed bank. Monitoring is necessary as tilling can increase disturbance, which can cause germination.

Biological

No biological control organisms are available.

Cultural Control

Targeted grazing is not recommended as plants contain toxic compounds. However, it can suppress young plants and should only be done in areas where other forage is readily available. Prescribed burning is not recommended as it can create conditions that increase germination and tumbleweed movement.

Chemical

Use of herbicides can be effective. Refer to the product labels for information application rates, timing, and approved application methods.

Recommended herbicides include:

- 2,4-D
- Clopyralid
- Glyphosate
- Indaziflam
- Isoxaben
- Metribuzin
- Picloram*

*Restricted use by U.S. EPA

References

DiTomaso, J.M., G.B. Keyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.

Southwestern Environmental Information Network (SEINET) Arizona-New Mexico Chapter Portal. Available at: <https://swbiodiversity.org/seinet/index.php>.

USDA, NRCS. 2023. PLANTS Database. Available at <https://plants.sc.egov.usda.gov/>. National Plant Data Team, Greensboro, NC 27401-4901 USA.



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